REMARKS

Amendments

Applicants hereby confirm their earlier oral election of the Group I claims (claims 1-33). Non-elected claims 34-39 are canceled herein without prejudice. The cross-references section on page 1 has been updated to reflect the conversion of USSN 08/585,005 to a provisional application and the updated filing date of this initial application as accorded by petition. The citation on page 2 has been corrected and ATCC deposit numbers and dates have been added on page 79 of the specification. With respect to the claim revisions, the claim 1 edits find basis on at least page 60, lines 4-7 and page 9, line 32. The ATCC deposit numbers have been included in claims 10, 13, 16 and 19. Claims 40-42 added herein are supported in at least page 20, line 27 through to page 21, line 11. In that the amendments do not introduce new matter, their entry is respectfully requested.

Information Disclosure

A third supplemental IDS, PTO-1449 form and references are submitted herewith. Applicants respectfully request consideration of the art in this third IDS. Applicants also point out that they do not have initialed copies of the PTO-1449 forms (copies attached) submitted with the first and second supplemental IDS's filed July 25, 1997 and September 5, 1997 and respectfully request initialed copies of the PTO-1449 forms confirming that this earlier cited art has been considered with respect to the instant application.

ATCC Deposits

ATCC deposit numbers and dates have been added for the 2D7, 1E11 and 1C11 antibodies as requested in item #2 of the Office Action. Copies of the ATCC receipts for each of the deposits mentioned on page 79 are provided with this amendment. Applicants believe that the Deposit Rules are hereby satisfied. If, however, further action is required to satisfy the Deposit Rules, Applicants respectfully request that the Examiner indicate what needs to be done in order to comply.

Section 112, second paragraph

The Examiner has rejected claim 3 under 35 USC §112, second paragraph as being indefinite. For claim precision, the claim now refers to SEQ ID NO:2. Reconsideration of the rejection is respectfully requested.

Secti n 112, first paragraph

Claims 1-9, 11, 14, 17, 20 and 25-33 are rejected under 35 USC §112, first paragraph on the basis that the specification, while being enabling for antibodies to certain forms of the OB/leptin receptor, allegedly does not reasonably provide enablement for antibodies to any WSX receptor, and antibodies to any epitope and on any WSX receptor.

Claim 1 now refers to an antibody which is capable of binding to the extracellular domain of WSX receptor comprising the extracellular domain sequence within SEQ ID NO:2. Applicants submit that the specification describes how one could generate antibodies which are able to bind to the extracellular domain of the WSX receptor (see page 60, lines 4-7) and screen for antibodies with properties as recited in the claims (see page 20, line 26 through to page 21, line 11; page 66, line 19 through to page 69, line 25; and Examples 13 & 14 on pages 93-98 of the specification). Hence, Applicants submit that the specification does enable agonist antibodies against the WSX receptor as instantly claimed.

Reconsideration of the rejection is respectfully requested in view of the above.

Section 102/103

Claims 1-9 and 25-33 are rejected under 35 USC §102(e) as anticipated by, or in the alternative, under 35 USC §103(a) as obvious over any one of Kishimoto *et al.* (U.S. Pat. No. 5,670,373), Park *et al.* (U.S. Pat. No. 5,543,320) or Burstein *et al.* (U.S. Pat. No. 5,571,513). Kishimoto *et al.* and Burstein *et al.* are cited as disclosing antibodies to the IL-6 receptor and Park *et al.* is relied upon as disclosing antibodies to the IL-7 receptor. The Examiner asserts that, while the prior art does not expressly teach that these receptors are WSX receptors, it is "well known in the art" that many cytokines, such as IL-6 and IL-7, are hematopoietins and that they bind to receptors that possess a WSX motif. The Examiner further contends that, in the event the prior art antibodies do not have agonist activity or are neutralizing antibodies, or possess the claimed affinity, it would have been *prima facie* obvious to make antibodies that possess these desired properties "based on the advancement in the technology of antibody art".

Applicants submit that the claimed invention is novel and nonobvious over the cited references. In particular, the cited references failed to teach, or allude to, the WSX receptor of the instant application comprising the extracellular domain sequence within SEQ ID NO:2. Thus, the cited

references would not have enabled the production of antibodies which bound to the WSX receptor as claimed herein. Moreover, the claims at issue are directed to agonist antibodies, *i.e.*, antibodies which are capable of activating the WSX receptor (see, for example, page 20, lines 27-28 of the instant specification). The Examiner has failed to show any motivation in the cited references to make agonist antibodies.

Accordingly, Applicants submit that the §102/§103 rejection should be reconsidered and withdrawn.

Section 103

Claims 1-33 are rejected under 35 USC 103(a) as being unpatentable over Snodgrass *et al.* (U.S. Patent No. 5,643,748). The Examiner cites Snodgrass *et al.* as disclosing a novel hematopoietin receptor having a WSX motif which can be used to screen for ligands or to make antibodies. The Examiner acknowledges that Snodgrass *et al.* did not expressly disclose antibodies to this receptor or the identity of the ligand as leptin, but asserts that "in view of the fact that the receptor has been identified as a hematopoietin receptor with a WSX motif, it would have been prima facie obvious to use this WSX receptor to make the various claimed antibodies that would possess all of the properties/characteristics of the claims, consistent with the teachings in this prior art that antibodies to the WSX receptor could be made."

Applicants submit that the instantly claimed invention is patentable over Snodgrass *et al.*

It is well settled that references relied upon to support a rejection under 35 USC §103 must provide an enabling disclosure, *i.e.*, they must place the claimed invention in the possession of the public. An invention is not "possessed" absent some known or obvious way to make it." *In re Payne, Durden & Weiden*, 606 F.2d 303, 314, 203 USPQ 245, 255 (C.C.P.A 1979). Applicants submit that the Snodgrass *et al.* patent, upon which the instant §103 rejection is based, fails to enable the instantly claimed antibodies.

First, Snodgrass *et al.* discloses only a "partial cDNA sequence" (column 2, lines 60-61; emphasis added) encoding a putative hematopoietin molecule. This patent fails to show any full length receptor sequence, much less the intact sequence of a molecule which is able to transmit an intracellular signal as instantly claimed. Hence, those skilled in the art could not have predicted from Snodgrass *et al.* whether or not an antibody could have been generated against the extracellular

domain of the WSX receptor of the instant application, which activated the receptor (*i.e.* which was an agonist antibody).

Second, the cited patent fails to show any biological activity for the putative hematopoietin molecule and does not identify any ligand(s) for this molecule. Thus, those skilled in the art at the relevant time would not have known from Snodgrass *et al.* the activity of the partial sequence and could not have known the identity of any ligand for this partial sequence (if any ligand existed). Without this information, the skilled biochemist at the relevant time could not have predicted from Snodgrass *et al.* whether or not agonist antibodies could indeed be made.

In addition to the above, the cited patent fails to teach how one would go about making and screening for antibodies with agonist properties. The patent fails to describe an immunogen which can successfully be used to generate agonist antibodies and, furthermore, does not disclose an assay which can be employed to screen for antibodies which are able to activate the receptor of the instant application. Accordingly, those skilled in the art at the relevant time could not have made agonist antibodies as set forth in the claims of the instant application.

Furthermore, the cited patent teaches away from the agonist antibodies of the instant application by stating that neutralizing antibodies (the opposite of agonist antibodies) are preferred for diagnostics and therapeutics (lines 65-67 in column 11).

In addition, Applicants point out that the dependent claims of the instant application recite features which are independently patentable over Snodgrass *et al.* For example, the cited patent does not disclose or suggest: the WSX receptor variant 13.2 sequence of SEQ ID NO:2 (claim 3), much less an agonist antibody which is able to activate this particular molecule; antibodies with strong binding affinities as recited in claims 4 and 5 of the instant application; antibodies which cross-react with murine WSX receptor and human WSX receptor (claims 2 and 6); the KIRA ELISA assay or antibodies with the recited activity in this assay (claims 7-9); the antibodies 2D7, 1G4, 1E11, 1C11 (claims 10-21); human antibodies such as clone 3, 4 and 17 (claims 22-24); compositions, optionally lyophilized and/or further comprising a cytokine as in claims 30-33; antibodies which mimic a biological property of OB protein (claim 40); antibodies which stimulate proliferation or differentiation of a cell which expresses the WSX receptor (claim 41); or antibodies which decrease body weight, fat depot weight or food intake in an obese mammal (claim 42). Applicants submit that the Examiner

has failed to show how Snodgrass *et al.* would have described or alluded to these preferred embodiments of the instant invention.

In view of the above, Applicants respectfully request that the §103 rejection based on Snodgrass *et al.* be reconsidered and withdrawn.

Applicants believe that the amendments and comments here put this case in condition for allowance. Nevertheless, should the Examiner have any further comments or questions, she is invited to call Wendy Lee at (650) 225-1994 concerning these.

Respectfully submitted,

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